R E P O R T R E S U M E S

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THE PREPARATION OF CURRICULUM MATERIALS AND THE DEVELOPMENT OF TEACHERS FOR AN EXPERIMENTAL APPLICATION OF THE CLUSTER CONCEPT OF VOCATIONAL EDUCATION AT THE SECONDARY SCHOOL LEVEL. PHASE II, CLUSTER CONCEPT PROJECT. SECOND QUARTERLY REPORT.

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DESCRIPTORS- *EXPERIMENTAL PROGRAMS, *TRADE AND INDUSTRIAL EDUCATION, *OCCUPATIONAL CLUSTERS, *TEACHER SELECTION, INSTRUCTIONAL MATERIALS, HIGH SCHOOLS, TEACHER EDUCATION, CLUSTER CONCEPT PROJECT,

OBJECTIVES DURING THE PROJECT'S SECOND QUARTER WERE TO (1) COMPLETE THE SELECTION OF TEACHERS, (2) COMPLETE THE DEVELOPMENT OF THE TEACHER PREPARATION PROGRAM, (3) INITIATE THE TEACHER PREPARATION PROGRAM, (4) HOLD ORIENTATION MEETINGS FOR COUNSELORS AND ADMINISTRATORS INVOLVED IN THE PILOT PROGRAMS, AND (5) OBTAIN MATERIAL AND INFORMATION FROM INDUSTRIAL ORGANIZATIONS AND BUSINESSES ABOUT PREPARING THE SELECTED TEACHERS TO TEACH THE JOB ENTRY TASKS IN THEIR RESPECTIVE OCCUPATIONAL CLUSTERS. AN INTERVIEW SCHEDULE WAS USED IN A TAPE-RECORDED INTERVIEW WITH EACH TEACHER CANDIDATE. ROKEACH DOGMATISM SCALE WAS ADMINISTERED TO OBTAIN AN INDICATION OF COGNITIVE RIGIDITY AND FLEXIBILITY. USING A COMPOSITE OF THE INFORMATION, AN EVALUATION PANEL SELECTED THREE TEACHERS FOR EACH OF FOUR COUNTIES. THREE TEACHER PREPARATION SESSIONS INVOLVED ANALYZING A JOB ENTRY TASK, WRITING BEHAVIORAL OBJECTIVES, AND FORMULATING A FORMAT FOR ARRANGING INSTRUCTIONAL INFORMATION. ORIENTATION SESSIONS ACQUAINTED COUNSELORS AND ADMINISTRATORS WITH THE PROJECT PURPOSES AND ENCOURAGED THEIR COOPERATION WITH THE PILOT PROGRAMS. POSSIBLE INDUSTRIAL RESOURCE PERSONNEL WERE IDENTIFIED. PROPOSED OBJECTIVES AND ACTIVITIES FOR THE THIRD QUARTER ARE GIVEN. THE APPENDIX CONTAINS FORMS USED IN TEACHER SELECTION. RELATED DOCUMENTS ARE VT 002 165, VT 002 166, VT 002 167, VT 002 491, AND VT 002 356. (EM)

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The Preparation of Curriculum Materials and the Development of Teachers for an Experimental Application of the Cluster Concept of Vocational Education at the Secondary School Level

Second Quarterly Report
Phase II of the
Cluster Concept Project
Conducted by
The Industrial Education Department
University of Maryland
College Park, Maryland

1966 - 1967

VT003254

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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QUARTERLY REPORT

THE PREPARATION OF CURRICULUM MATERIALS AND THE DEVELOPMENT OF TEACHERS FOR AN EXPERIMENTAL APPLICATION OF THE CLUSTER CONCEPT OF VOCATIONAL EDUCATION AT THE SECONDARY SCHOOL LEVEL

PHASE II

CLUSTER CONCEPT PROJECT

BR-6-2312
PA 08

Principal Investigator

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UNIVERSITY OF MARYLAND

Submitted to the U. S. Commissioner of Education
Under the Provisions of Section 4 (c)
of the Vocational Education Act of 1963

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Office of Education

March 1, 1967

INTRODUCTION

This second quarterly report presents the progress of the Cluster Concept Project, Phase II: "The Preparation of Curriculum Materials and the Development of Teachers for an Experimental Application of the Cluster Concept of Vocational Education at the Secondary School Level." The first section of the report summarizes the progress made during the first quarter, while the remaining sections present the progress made during the second quarter of the project.

SUMMARY OF THE FIRST QUARTER

During the first quarter of the project, major emphasis was placed on the development of techniques and instruments to be used in selecting a group of teachers who would be capable of implementing an experimental cluster concept program in vocational education at the secondary school level.

The following procedures were established and carried out during the first three months of the project to select the teachers for the program:

1. The industrial education supervisors in the counties of Prince George's, Montgomery, Frederick and Washington recommended a group of teachers for possible participation in the program.

2. An initial group meeting was held with the teachers recommended by the county industrial education supervisors to acquaint them with the cluster concept project and provide them with information about the teacher preparation program.

3. A questionnaire was completed by each of the recommended teachers in order to obtain information about their educational preparation, various occupational experiences, teaching positions held as well as other pertinent information.

The following procedures were established for the second quarter of the project to select the teachers for the pilot cluster concept programs in vocational education.

1. An interview will be conducted with each teacher using a formal interview schedule to obtain information concerning teaching competencies.

2. The Rokeach Dogmatism Scale will be administered to the teachers to obtain an indication of an individual's cognitive rigidity and flexibility.

3. A panel of individuals, consisting of the county industrial education supervisors, the assistant director of vocational education for Maryland, the principal investigator and the project coordinator will review the data collected for each prospective teacher and select twelve teachers for participation in the program. (Three teachers, one for each cluster, from the four counties).

During the first quarter of the project, the project team was also involved in the development of the teacher preparation program. A collection of instructional materials was obtained from various sources for use in the teacher preparation program. These materials included: phamphlets, films, filmstrips, and service manuals.

Information was also obtained about teaching methods and instructional devices that may be used in teaching the occupational clusters. The areas of interest include: team teaching, programmed instruction, educational television, auto-tutorial devices, and videotape systems. The materials have been filed and will be reviewed by the teachers for use in teaching their respective clusters.

A meeting was also held with the county industrial education supervisors and representatives from the State Department of Vocational

Education for the purpose of determining financial support for the pilot programs and certification requirements for the teachers participating in the pilot programs. The State Department personnel expressed a desire to cooperate with the project and were willing to provide the available support and services required to implement the pilot programs.

The following section of the report is a discussion of the activities and status of the second quarter of the project. Many of these activities were a continuation of specific items initiated during the first quarter.

SECOND QUARTERLY REPORT

A. Objectives

The objectives for the second quarter of the project were based on the progress made during the project's first quarter. The following objectives were identified for the second quarter of the project:

Objective 1: Completing the selection of teachers for participation in the teacher preparation program.

Objective 2: Completing the development of the teacher preparation program.

Objective 3: Initiating the teacher preparation program.

Objective 4: Scheduling and conducting orientation meetings with guidance counselors and administrative personnel who will be involved with the implementation of pilot programs.

Objective 5: Contacting individuals in various industrial organizations and businesses to obtain material and information about preparing the selected teachers to teach the skills and knowledges required for job entry tasks in their respective occupational clusters.

B. Present Status of the Project

The present status of the project, with respect to the previously mentioned objectives for the first quarter, is discussed in the following section of the report.

Objective I: Completing the selection of teachers for participation in the teacher preparation program.

During the early part of the second quarter, approval was obtained from the Internal Clearance Committee of the United States Office of Education to use the previously submitted interview schedule and Rokeach Dogmatism Scale in the selection of teachers.

The interview schedule was used in a tape recorded interview with each recommended teacher to obtain an indication of teacher competency. These interviews were then evaluated by members of the project team and each teacher was rated according to their answers to the interview questions. The interview questions provided information about the following teacher competencies which were reported by Gage.[1]

A. Committment to Teaching - A teachers interest and enthusiasm for teaching.

B. Warmth - "The tendency of a teacher to be approving, to provide emotional support, to express a sympathetic attitude and to accept the feelings of pupils."[2]

C. Cognitive Organization - A teacher should possess and exhibit an intellectual grasp of his subject matter. Such a teacher understands the processes and concepts of his subject. "He carries with him a set of 'organizers' for his subject matter that provides him, and so his pupils,

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[1]Nathan L. Gage, "Desirable Behaviors of Teachers," Teachers for the Disadvantaged (Editors, M. D. Usdan and F. Bertolaet, Chicago: Follet Publishing Company, 1966).

[2]Ibid., p. 5.

with "relevant ideational scaffolding" that discriminates new material from the previously learned and integrates it at a level of abstraction, generality, and inclusiveness which is higher than that of the learning material itself."[3]

D. Orderliness - "By 'orderliness' we mean the teacher's tendency to be systematic and methodical in his self-management."[4]

E. Indirectness - "A tendency toward indirect methods of teaching consists in giving pupils opportunities to engage in overt behaviors, such as talking and problem solving, relevant to the learning objectives rather than merely listening to their teacher and to discover ideas and solutions to problems rather than merely receiving them from the teacher."[5]

F. Ability to solve instructional problems - "By 'ability to solve instructional problems we mean the teacher's ability to solve problems unique to his work in a particular subdivision of the profession."[6]

The Rokeach Dogmatism Scale was administered to the teachers to obtain an indication of their cognitive rigidity and flexibility. Since the cluster concept is an innovation in vocational education and the participating teachers will be asked to accept and utilize new concepts in teaching the occupational clusters, it was important to measure an individual's willingness to accept new ideas and change.

A teacher evaluation composite was prepared to record the data and information that was obtained for each teacher. The composites, shown in Appendix C, were then used by the evaluation panel in their selection of teachers for participation in the program.

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[3] Ibid., p. 7.

[4] Ibid., p. 8.

[5] Ibid.

[6] Ibid., p. 9.

The selection panel consisted of the following individuals:

Samuel Geissenhainer
Supervisor
Industrial & Vocational Education
Prince George's County

Eugene F. Wood
Supervisor
Industrial & Vocational Education
Frederick County

Alfred C. Roth
Supervisor
Vocational Technical Education
Washington County

Elwood Mason
Supervisor
Industrial & Technical Education
Montgomery County

Donald Wilson
Supervisor
Industrial & Technical Education
Montgomery County

Warren Smeltzer
Assistant Superintendent
for Vocational Education
Maryland State Department
of Education

Dr. Donald Maley
Principal Investigator
Cluster Concept Project
University of Maryland

Nevin R. Frantz
Coordinator
Cluster Concept Project
University of Maryland

Each supervisor reviewed the teacher evaluation composites for the teachers in their counties and made evaluations with respect to available school facilities and school administrative policies. The supervisors then ranked and made additional comments about each teacher according to their evaluation of the data and the information presented on the composite. The principal investigator, project coordinator, and assistant superintendent for vocational education also ranked each teacher and made additional comments.

A joint conference was then held with each supervisor and the principal investigator, project coordinator and assistant superintendent to resolve any differences and make the final selection of teachers.

The following teachers were selected by the panel for participation in the Cluster Concept Program:

Teacher	High School	Occupational Cluster
Frederick County		
James R. Mason	Middletown	Construction
Harold J. Slimmer	Frederick	Metal Forming & Fabrication
Donald H. Campbell	Brunswick	Electro-Mechanical Installation and Repair
Montgomery County		
Charles T. Barton	Poolesville	Construction
Daniel P. Harrison	Montgomery Blair	Metal Forming & Fabrication
Prince George's County		
John L. Burrell	Fairmont Heights	Construction
William H. Stewart	Fairmont Heights	Metal Forming & Fabrication
John J. Millett	Bladensburg	Electro-Mechanical Installation and Repair
Washington County		
Paul H. Imphong	Hancock	Construction
Truman Doyle	Boonsboro	Metal Forming & Fabrication
Morris E. Lay	South Hagerstown	Electro-Mechanical Installation and Repair

Objective 2: Completing the development of the teacher preparation program.

A review of literature was made in the area of in-service teacher training and a number of letters were forwarded to various individuals and organizations that had recently conducted in-service training programs. The information obtained from these sources was used in the development of the teacher preparation program.

The teacher preparation program for the second semester will be concerned primarily with the development of instructional programs for each of the occupational clusters. Information will also be provided about educational materials and equipment that may be utilized in teaching the clusters.

The teachers participating in the program will meet one night a week during the Spring semester. The teachers from Montgomery County and Prince George's County will meet on Tuesday evenings at the University of Maryland. The teachers from Frederick County and Washington County will meet on Thursday evenings at Middletown High School, located in Frederick County. A tentative schedule has been developed for the teacher program during the Spring semester and may be found in Appendix D.

Objective 3: Initiating the Teacher Preparation Program.

The first sessions of the teacher preparation program were held on February 8th and 9th, 1967. Each county supervisor, as well as the assistant superintendent for vocational educational in Maryland was present at each of the meetings and welcomed the participants to the program. The project team then oriented the participants to the project by presenting information about the activities of the first phase. Each teacher was given an assignment to analyze a job entry task to determine the skills, mathematics, science, communication, measurement, and information required to perform the task.

The second session was devoted to developing the capability of writing behavorial objectives. The teachers used the items identified in their task analysis to prepare behavorial statements. The task analysis and preparation of behavorial objectives provided the teachers with the fundamental procedures utilized in developing the content for the occupational clusters.

The teachers were then involved in identifying information to be included in an instructional plan to be used in implementing the Cluster Concept Program. An assignment was made to develop a sample instructional plan that would provide a teacher with the information they needed to

teach the content identified for each occupational cluster.

The third session was spent in presenting and discussing the teacher-prepared instructional plans and formulating a format for arranging the information. The information identified in these instructional plans will be further analyzed to develop the final instructional sequence and time schedule.

Objective 4: Scheduling and conducting orientation meetings with guidance counselors and administrative personnel who will be involved with the implementation of pilot programs.

During the months of January and February, a series of meetings were held with the guidance counselors, high school principals, and supervisors who are directly involved with the organization, supervision, and administration of the pilot programs in each of the counties. The purpose of these meetings was to acquaint the county personnel with: (1) the purposes and activities of the Cluster Concept Project, and (2) to seek their cooperation in the implementation of the pilot programs.

The meetings were important in providing communication between the county school systems participating in the pilot programs and the project personnel. The county school personnel expressed a desire to cooperate with the project and were willing to provide the support and services required to implement the pilot programs.

Objective 5: Contacting resource persons in various industrial organizations and businesses to obtain materials and information about preparing the selected teachers to teach the skills and knowledges required for job entry tasks in their respective clusters.

Members of the project team have prepared a list of persons who may be possible consultants in preparing the teachers to teach the skills and knowledges needed to perform the job entry tasks. These individuals

would work with the teachers during the summer session to develop teacher competencies in the skill and knowledge areas for each occupational cluster. Several individuals have been contacted for the electro-mechanical installation and repair cluster. These persons were willing to cooperate in the preparation of the teachers and would be able to furnish instructional materials for the teachers.

Proposed Objectives and Activities for the Third Quarter

The proposed objectives and activities for the third quarter of the project are discussed in the following section of the report.

Objective 1: Conducting the teacher preparation program during the Spring semester.

The activities of the teacher preparation program during the second semester will emphasize: teacher development of instructional plans for implementing the pilot programs; acquainting the teachers with instructional materials and equipment that may be used in the implementation of the pilot programs.

At the completion of the semester the teachers will have developed instructional plans for each occupational cluster identifying suggested teaching methods, student activities, instructional materials, methods of evaluation, instructional sequence and time allotment.

Objective 2: Developing the teacher preparation program for the summer workshop.

A schedule of activities will be developed for the six-week summer session beginning June 19th and ending July 28, 1967. During this period of time, major emphasis will be placed on: (1) the development of needed skills and knowledges for each teacher, (2) developing the capability of using various teaching methods, and (3) preparing instructional

materials for use in each of the occupational clusters.

Objective 3: Developing a method of determining required teacher skills and knowledge and providing a method of evaluating their attainment.

A review and evaluation will be made of available standardized instruments that measure the technical knowledge required for the identified job entry tasks in each occupational cluster. A review of literature will also be conducted in the area of performance testing to formulate a method of evaluating the required skill performance in each occupational cluster. The information obtained from these investigations will be used in the development of procedures to be used in determining and evaluating the required teacher competencies.

Objective 4: Completing the identification and contact of resource persons in various industrial and business organizations to obtain materials and information about preparing the selected teachers to teach the skills and knowledges required for job entry tasks in their respective clusters.

Members of the project team will continue to identify and contact individuals in various business and industrial organizations to obtain information and materials for preparing the teachers to teach the required skills and knowledge for the job entry tasks. Resource persons for each occupational cluster will be identified by June 1, 1966.

APPENDIX A

TEACHER INFORMATION SHEET

DEPARTMENT OF INDUSTRIAL EDUCATION
UNIVERSITY OF MARYLAND

CLUSTER CONCEPT PROJECT

Teacher Information

1. Name _____ 2. Date _____
(Last) (First) (Middle)

3. Home Address _____ 4. Home Phone _____
(Street)

_____
(City) (State)

5. School Address _____ 6. School Phone _____
(Street)

_____
(City) (State)

7. Age ____ Birthdate _____ 8. Soc. Sec. No. _____
(Month) (Day) (Year)

9. Marital Status: Single ___ Married ___ 10. Number of dependents _____

11. Height ___ ' ___ " 12. Weight _____ 13. Physical defects: (Explain) _____

_____

_____

14. Cluster you are most interested in teaching:

Construction Cluster _____
Metal Forming & Fabrication Cluster _____
Electro-Mechanical Installation and Repair Cluster _____

15. Are you presently enrolled in the University of Maryland Graduate School?
Yes _____ No _____

16. Credits to be applied toward:
1. Master's Degree _____
2. Certification Requirement _____
3. Other _____

17. MILITARY SERVICE

_____
(Branch) (Rank) (Dates)

Nature of work: _____

_____

_____

18. EDUCATIONAL PREPARATION

(1) Secondary

(Name) (City) (State)

(Date of Graduation) (Major: Vocational, General, Academic)

(2) College (Undergraduate)

(Name of Institution) (City) (State)

(Date of Graduation) (Degree or certification)

(Major) (Minor)

(3) College (Graduate)

(Name of Institution) (City) (State)

(Date of Graduation or Date of Last Attendance) (Degree or Certification)

(Major) (Number of credit hours) (Minor) (Number of credit hours)

(4) Other (Military, trade schools, summer workshops, etc.)

(5) Scholastic Honors or Extra-curricular Activities:

High School:

College:

19. RELATED PROFESSIONAL EXPERIENCES

Membership in Professional Organizations	Offices Held

20. TEACHING EXPERIENCE - INDUSTRIAL ARTS
(Give last three positions held)

(1) _____
(Name of School or Agency) (City) (State)

_____
(Dates From - To) (Grades Taught) (Subject)

(2) _____
(Name of School or Agency) (City) (State)

_____
(Dates From - To) (Grades Taught) (Subject)

(3) _____
(Name of School or Agency) (City) (State)

_____
(Dates From - To) (Grades Taught) (Subject)

21. TEACHING EXPERIENCE - VOCATIONAL EDUCATION
(Give last three positions held)

(1) _____
(Name of School or Agency) (City) (State)

_____
(Dates From - To) (Grades Taught) (Subject)

(2) _____
(Name of School or Agency) (City) (State)

_____
(Dates From - To) (Grades Taught) (Subject)

(3) _____
(Name of School or Agency) (City) (State)

_____
(Dates From - To) (Grades Taught) (Subject)

22. TEACHING EXPERIENCE - ADULT EDUCATION
(Give last three positions held)

(1) _____
(Name of School or Agency) (City) (State)

_____
(Dates From - To) (Subject)

(2) _____
(Name of School or Agency) (City) (State)

_____
(Dates From - To) (Subject)

(3) _____
(Name of School or Agency) (City) (State)

_____
(Dates From - To) (Subject)

23. WORK EXPERIENCE: (Business, Industry, Trades, Summer occupations, etc.) Give last five work experiences.

(1) _____
(Firm Name) (Dates From - To)

_____ Full Time___ Part Time_____
(Nature of Work)

(2) _____
(Firm Name) (Dates From - To)

_____ Full Time___ Part Time_____
(Nature of Work)

(3) _____
(Firm Name) (Dates From - To)

_____ Full Time___ Part Time_____
(Nature of Work)

(4) _____
(Firm Name) (Dates From - To)

_____ Full Time___ Part Time_____
(Nature of Work)

(5) _____
(Firm Name) (Dates From - To)

_____ Full Time___ Part Time_____
(Nature of Work)

APPENDIX B

INTERVIEW SCHEDULE

University of Maryland
Department of Industrial Education
Cluster Concept Project

Interview Schedule

1. Administering the interview:

The primary purpose of the interview is to evaluate the responses of the interviewee on the rating scale following each question. The quality of the answer should be judged only in terms of the examples of unacceptable and ideal responses. In order to gather information suitable for making the judgement called for, it will be necessary to conduct the interview in a manner that provokes the interviewee into doing most of the talking. In addition, attention must be paid to guiding the interview in the direction which will supply the information desired.

2. Getting the interview started:

The interviewer should establish a pleasant atmosphere before proceeding to the questionaire and should avoid giving the impression that the interview must be conducted on a time schedule. Attention should also be paid towards providing adequate physical facilities such as privacy, ash trays and comfortable chairs.

After reviewing the personal information at the beginning of the questionaire, as a means of establishing rapport, go directly to the first question unless the interviewer feels that a sufficient amount of warmth has not been developed. Should the latter occur, it is suggested that one or more "warm up" questions be used similar to those suggested on the page following the personal information. Avoid doing any writing during the interview and refer to the questionaire only if it is not possible to remember the question.

3. Checking the progress of the interview:

Keep the interview moving along, again, without giving the impression of meeting a time schedule or conveying the impression that the interviewee is being overly verbose. The interviewee should be left to interpret the question on his own and should not be aided in answering other than to repeat the question if a response is not forthcoming after a reasonable length of time.

4. Terminating the interview:

The interviewee should not be given any indication of the worth of his answers. Close the interview by thanking the interviewee and expressing appreciation for having been able to talk with him.

5. Warm up questions: The following questions may help initiate an informal atmosphere at the beginning of the interview.

   Examples of "warm up" questions:

   a. What type of practical experience have you had?

   b. How many students do you meet each day?

   c. Are you native to this area?

   d. How old is this school building?

   e. What do you think about the Cluster Concept?

6. Personal information of candidate:

   Name_____

   School_____

   Date_____

   Time_____

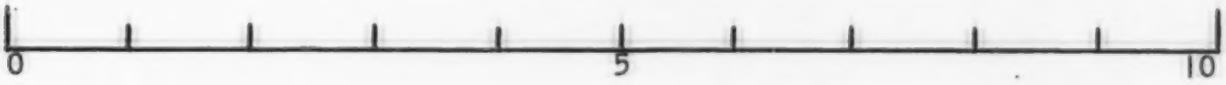
7. Comments of interviewer:

A. COMMITTMENT TO TEACHING

1. WHAT REASONS DO YOU HAVE FOR WANTING TO TEACH IN A PILOT PROGRAM OF THE CLUSTER CONCEPT?

Unacceptable: Does not like present position, desires a change. Might get some new equipment. It's something different.

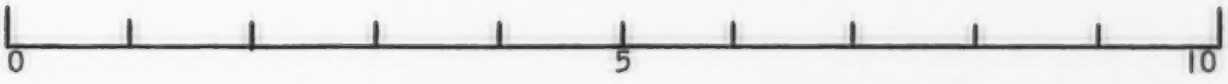
Ideal: Concerned about future employment opportunities of youth. Desire to learn and further education. Desire to improve self.



2. WHAT PERSONAL CHARACTERISTICS (TALENTS, SKILLS OR ATTITUDES) DO YOU BELIEVE A TEACHER SHOULD HAVE TO TEACH IN THE CLUSTER CONCEPT PILOT PROGRAM?

Unacceptable: Able to organize physical facilities. Discipline. Superb technical skill.

Ideal: Desire to try new things. A leader. Occupational experience. Is flexible.

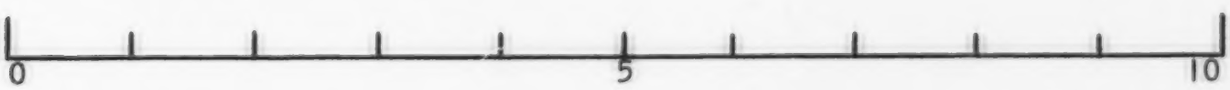


B. EVIDENCE OF A FEELING OF WARMTH TOWARD STUDENTS

3. WHEN YOU VISIT A TEACHER IN HIS CLASSROOM WHAT ARE SOME THINGS WHICH CAN BE OBSERVED CONCERNING THE TEACHER AND THE STUDENTS WHICH COULD LEAD YOU TO AN EVALUATION OF THE EDUCATIONAL OFFERING?

Unacceptable: Tight discipline. Instructor in control of activities and access to tools and materials.

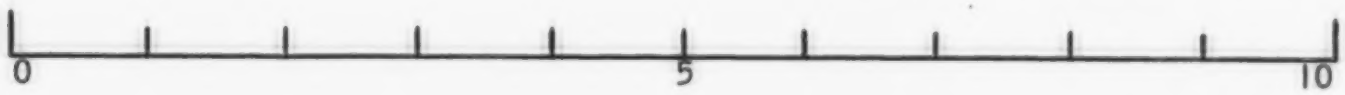
Ideal: Cordial teacher-student relationships. Teacher not a dispensor of all information. Student initiative evident.



4. HOW DO YOU FEEL ABOUT THE COMMENT THAT A TEACHER SHOULD BE MORE INTERESTED IN THE DEVELOPMENT OF PEOPLE THAN IN THE MAKING OF THINGS ON THE PART OF THE STUDENTS?

Unacceptable: Parents like to see projects brought home. They have been our biggest selling point.

Ideal: The ultimate aim of education is the development of good citizens.

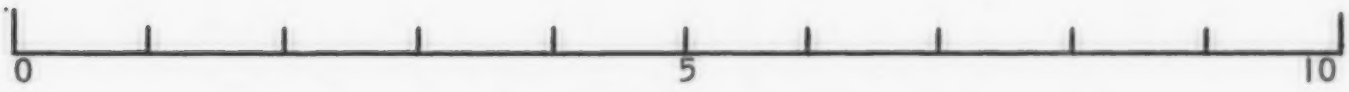


C. FLEXIBILITY AND PERSONAL ORGANIZATION

5. HOW DO YOU FEEL THE RESPONSIBILITIES OF A PERSON INVOLVED IN TEACHING AN EXPERIMENTAL COURSE WOULD DIFFER FROM A TEACHER OF AN ESTABLISHED SUBJECT?

Unacceptable: A lot of time required to make physical rearrangements. More time will be necessary for planning.

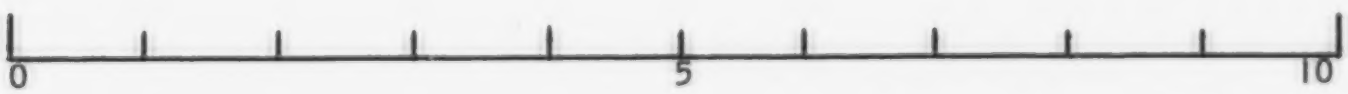
Ideal: More detailed planning, new resources to investigate. Should not be too much difference because a good teacher is always trying new materials and methods. More evaluation will be necessary. Flexible and open-minded.



6. YOU HAVE PLANNED A DEMONSTRATION INVOLVING THE PREPARATION, OPERATION, USE, CLEAN-UP AND MAINTENANCE OF A CONCRETE MIXER WHICH WOULD NORMALLY TAKE ALL PERIOD. FIVE MINUTES AFTER THE CLASS BEGINS A SPECIAL ASSEMBLY OF ALL STUDENTS AND FACULTY WAS ANNOUNCED TO BEGIN AT THE MIDDLE OF THE PERIOD. WHAT WOULD YOU DO?

Unacceptable: Stop the lesson and plan on starting over next day. I don't know what I would do.

Ideal: I wouldn't plan this much for one day anyway. Introduce the topic but not mix any cement.

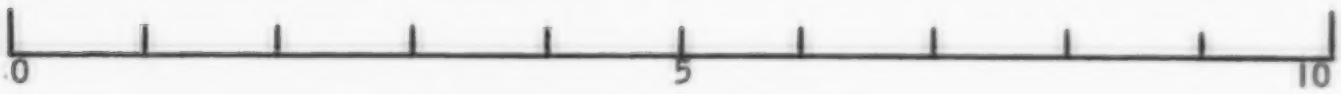


D. CONCERN FOR PHYSICAL APPEARANCE OF THE CLASSROOM

7. WHAT IMPLICATIONS MIGHT BE MADE CONCERNING A PERSON'S SUCCESS IN TEACHING FROM VISITING HIM IN HIS HOME WORKSHOP?

Unacceptable: Successful because of accuracy and appearance of completed work. Quantity and quality of personal tools and equipment.

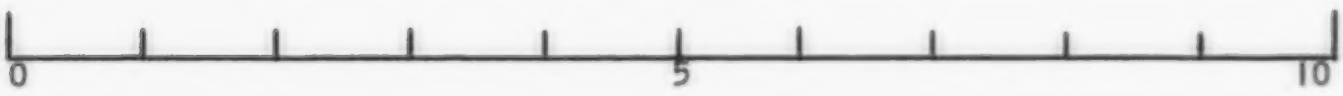
Ideal: Relationship is questionable. Organization of room, work, tools and materials is one indication of a desirable teacher. Improvised methods evident to make up for lack of equipment.



8. ARE THERE ANY CONNECTIONS THAT CAN BE MADE BETWEEN THE APPEARANCE OF A SHOP AND THE QUALIFICATIONS OF A TEACHER?

Unacceptable: A shop is a place to work. Housekeeping is not a measure of the quality of work turned out.

Ideal: Apnearance is important as a conveyor of an attitude. Helps student learn a value system. An organized shop usually means an organized program. Good housekeeping doesn't necessarily mean a good program.

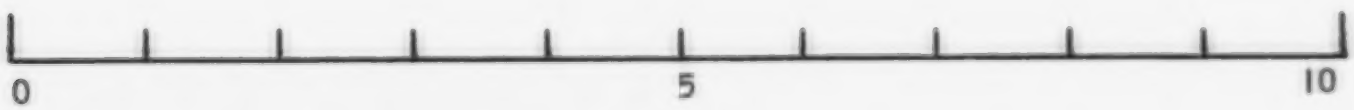


E. USING STUDENT CONTRIBUTIONS - CONCERN FOR STUDENT FEELING

9. WHILE YOU ARE TEACHING A RATHER DIFFICULT LESSON A STUDENT ASKS A QUESTION THAT IS NOT DIRECTLY RELATED TO THE TOPIC. IF YOU SHOULD FEEL THAT THE CONTINUITY OF THE TOPIC IS BEING THREATENED, HOW WOULD YOU PROPOSE TO RESPOND TO THE STUDENT?

Unacceptable: Ask him to repeat the question when we are on the appropriate unit. Explain that this was not the topic we were concerned with.

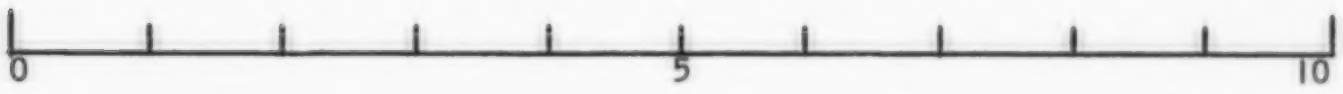
Ideal: Try to interpret the question to the class so that it would have relevance to the topic. In some way give the student a feeling of contribution to the topic.



10. THE REMARK HAS BEEN MADE THAT THE HIGHLY INFORMAL ATMOSPHERE OF THE LOWER ELEMENTARY GRADE CLASSROOM HOLDS MANY IMPLICATIONS FOR USE IN HIGH SCHOOL AS WELL. HOW WOULD YOU RESPOND TO SUCH A STATEMENT?

Unacceptable: Women teachers can do a better job of this than men. The extent of work to be covered in high school precludes this type of approach.

Ideal: More maturity should be expected of high school students but group methods, class interaction and informal atmosphere will contribute to superior learning situations.

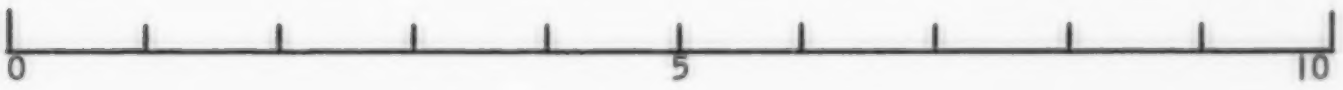


F. ORGANIZATION OF SUBJECT MATTER

11. WHAT WOULD YOU DO IF YOU ENCOUNTERED A SEGMENT OF THE CURRICULUM YOU DID NOT FEEL CAPABLE OF TEACHING?

Unacceptable: Cover what I could, Would not attempt to teach it.

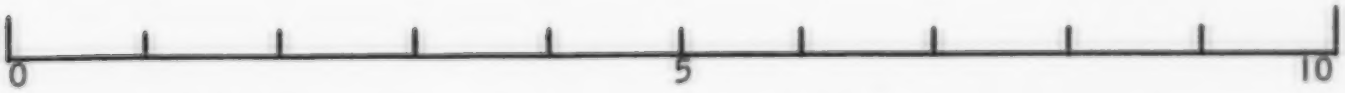
Ideal: Make every effort to improve my knowledge. Contact an expert in the subject to teach it.



12. WHAT IS THE MOST EFFECTIVE TEACHING METHOD YOU HAVE HAD EXPERIENCE WITH AND WHY DO YOU THINK IT HAS BEEN SUCCESSFUL?

Unacceptable: Elaborately describes one method that is used almost exclusively.

Ideal: Has no method considered most effective. Describes or infers that several methods are used. Method varies with students and material to be presented.



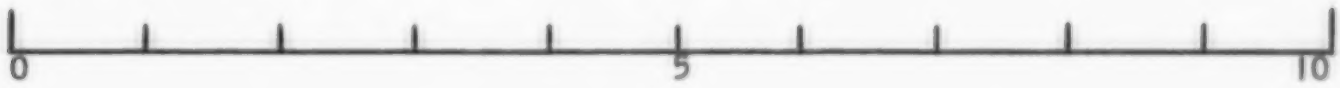
G. ABILITY TO SOLVE INSTRUCTIONAL PROBLEMS

13. THIS IS A TEST OF ELEMENTARY BLUEPRINT READING. WE WOULD LIKE YOU TO CORRECT THIS TEST. THE CORRECT ANSWERS ARE ON THE RIGHT.

UPON COMPLETING THE CORRECTION OF THE PAPER ASK:
WHAT EVALUATIONS OR JUDGEMENTS WOULD YOU MAKE OF THE STUDENT BASED ON THE RESULTS OF THE TEST?

Unacceptable: He has four wrong. He is not a good student. He needs more practice in blueprint reading. His calculations are not correct.

Ideal: The student has problems in reading radii. He does not understand radii or the concept of radius.

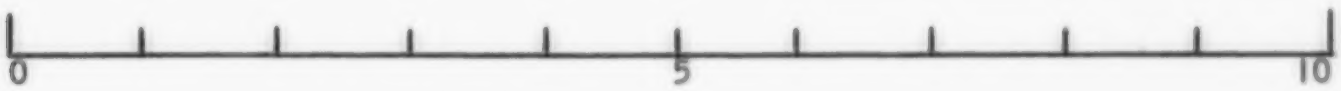


14. THIS IS A TEST OF APPLIED MATHEMATICS. WE WOULD LIKE YOU TO CORRECT THIS TEST. THE CORRECT ANSWERS ARE ON THE RIGHT.

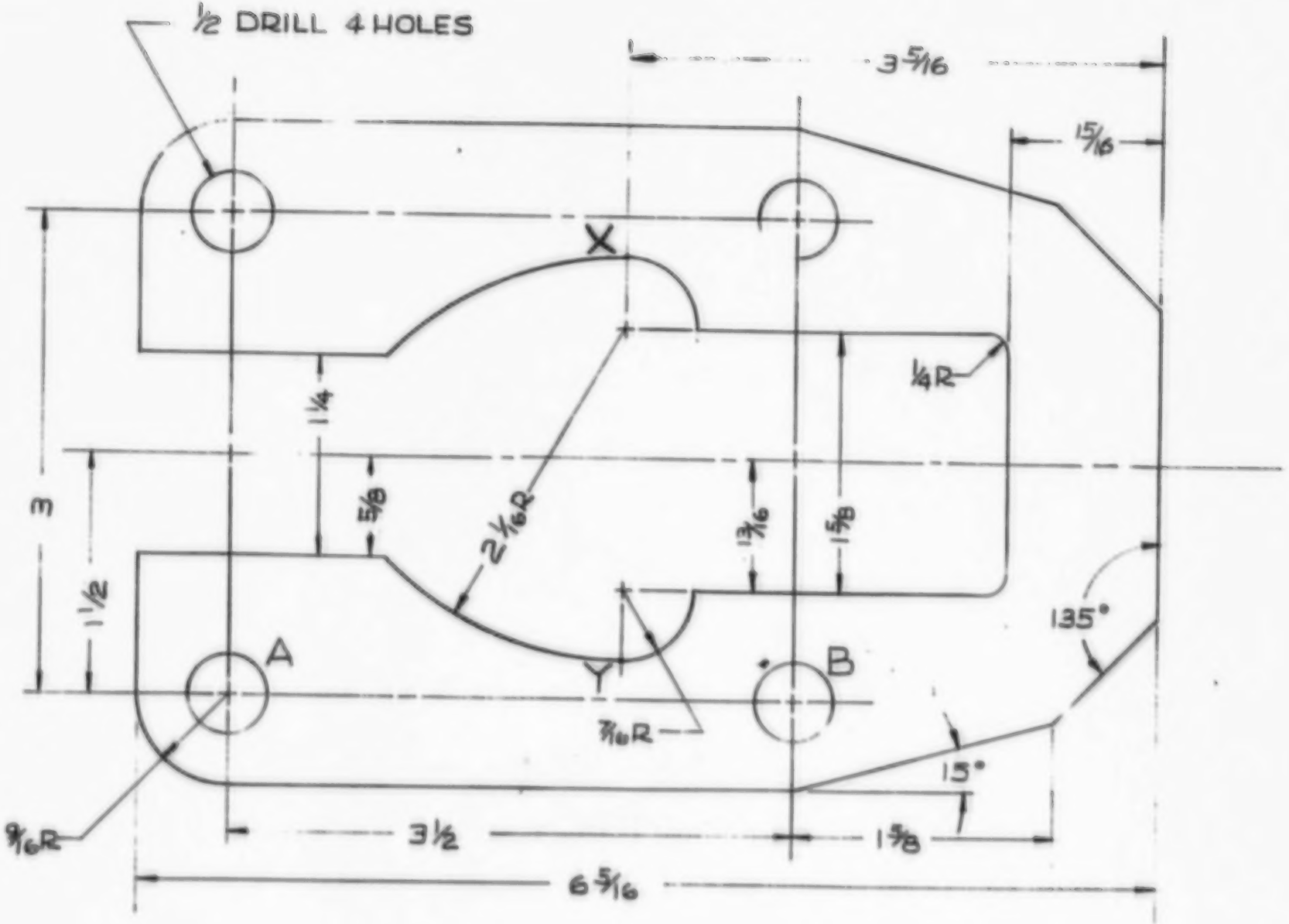
UPON COMPLETING THE CORRECTIONS OF THE PAPER ASK:
WHAT EVALUATIONS OR JUDGEMENTS WOULD YOU MAKE OF THE STUDENT BASED ON THE RESULTS OF THE TEST?

Unacceptable: The student has three questions wrong. He needs more practice. His calculations are not correct.

Ideal: The student's main problem is in placement of the decimal point. His computational work is satisfactory.



LATCH PLATE


½ DRILL 4 HOLES
3 5/16
15/16
X
1¼
¼R
3
5/8
2 1/16R
1 3/16
1 5/8
1½
135°
A
Y
B
3/16R
15°
9/16R
3½
1 5/8
6 5/16

13.

From the drawing of the latch plate on the preceding page answer the following questions:

a. What is the distance from the left edge to the center of hole "A"?

$6\frac{5}{16} - 5\frac{1}{8}\ \frac{5}{16} = 1\frac{3}{16}$

$1\frac{3}{16} \div 2 = \frac{11}{32} + \frac{3}{32} = \frac{19}{32}$ Ans.

Ans. 9/16"

b. What is the radius of the 4 drilled holes?

$\frac{1}{2}$" Ans.

Ans. 1/4"

c. What is the maximum opening in the latch plate?
(From Point X to Point Y)

$1\frac{17}{16}$ $2\frac{1}{16}$" Ans.

Ans. 2 1/2"

d. What is the smallest opening in the latch plate?

$1\frac{1}{4}$" Ans.

Ans. 1 1/4"

e. What is the total width of the latch plate?

$3 + \frac{1}{4} + \frac{1}{4} + \frac{9}{16} + \frac{9}{16} =$

$3 + \frac{4}{16} + \frac{4}{16} + \frac{9}{16} + \frac{9}{16} = 3 + 1\frac{10}{16} = 4\frac{10}{16} = 4\frac{5}{8}$ Ans.

Ans. 4 1/8"

f. What is the distance between centers of holes "A" and "B"?

$3\frac{1}{2}$" Ans.

Ans. 3 1/2"

14.

a. A blueprint specifies that three finished pieces are to be cut from a 1/2" round bar. These pieces measure .690", 4.206", and 1.361". Allow .120" for each cut and .007" for finishing each end of each piece. What is the minimum amount of stock that will be used up?

.007 × 6 = .042

.120 × 3 = .360

.690 + 4.206 + 1.361 + .042 + .360 = 6.659 Ans.

Ans. 6.659

b. What is the inside diameter of a pipe whose outside diameter is 3/4" and the sidewalls of which are .106" thick?

.106 × 2 = .212

.75 − .212 = .538 Ans.

Ans. .538"

c. How many pieces of stock 1.39" long can be obtained from a bar 2 feet long?

12 × 2 = 24

1.39 | 240 → 17 Ans.

Ans. 17

d. What is the cross-sectional area of a piece of bar stock measuring .375" X .750"?

.375 × 750 = 281250

2.81 sq in Ans.

Ans. .28 sq.in.

e. What are the maximum and minimum diameters of a hole specified as 1.875"D, ±.002"?

1.875 − .002 = 1.873 Min Ans.

1.875 + .002 = 1.877 Max. Ans.

Ans. 1.873"D.min.
1.877"D.max.

f. How many cubic inches of material are wasted when a piece of material is reduced from 1.5" X 2.25" X 3.6" to 1.25" X 2" X 2.75"?

1.25 × 2 = 2.50

2.75 × 2.5 = 6.875

2.25 × 1.5 = 3.375

3.375 × 3.6 = 12.150

12.150 − 6.875 = 5.275 Ans. in Ans

Ans. 5.275 Cu.in.

APPENDIX C

TEACHER EVALUATION COMPOSITE

TEACHER EVALUATION COMPOSITE

I. TEACHER INFORMATION:

Name:_____ County:_____

School:_____

School Phone:_____ Home Phone:_____

Desired Cluster:_____

Designated Cluster:_____

Age:_____ Marital Status:_____ Number of Dependents:_____

II. INTERVIEW SCHEDULE RATINGS:

Rating on Individual Question	Competency	Competency Rating (Average)
1. _____ 2. _____	A. Committment to Teaching	_____
3. _____ 4. _____	B. Evidence of a Feeling of Warmth Toward Students	_____
5. _____ 6. _____	C. Flexibility and Personal Organization	_____
7. _____ 8. _____	D. Concern for Physical Appearance of the Classroom	_____
9. _____ 10. _____	E. Using Student Contributions-Concern for Student Feeling	_____
11. _____ 12. _____	F. Organization of Subject Matter	_____
13. _____ 14. _____	G. Ability to Solve Instructional Problems	_____

Total Average Rating. . . . . .
Percentile . . . . . _____
Rank in County. . . . . _____

III. ROKEACH'S TEST SCORE:

Raw Score . . . . . .
Percentile . . . . . _____
Rank in County. . . . . _____

IV. TEACHING EXPERIENCE:

	Area	Months	Total
Industrial Arts			
Vocational			
Adult			
Other			

V. OCCUPATIONAL EXPERIENCE:

	Months	Total
Type of Work		
Military		

VI. EDUCATIONAL PREPARATION:

	Major	Minor
____ Vocational Certification		
____ B. S.		
____ B. S. + 30		
____ M. A.		
____ M. A. + 30		

VII. SCHOOL FACILITIES:

0 ——————————— 10

VIII. SCHOOL ADMINISTRATION:

0 ——————————— 10

IX. SUPERVISOR'S COMMENTS:

X. SUPERVISOR'S RATING BY RANK:

XI. PANEL'S COMMENTS:

XII. PANEL'S RATING BY RANK:

APPENDIX D

TENTATIVE TEACHER PREPARATION PROGRAM SCHEDULE FOR THE SPRING SEMESTER

TENTATIVE TEACHER PREPARATION PROGRAM SCHEDULE

Cluster Concept Project
Industrial Education Department
University of Maryland

DATE	ACTIVITIES	ASSIGNMENT DUE
Session #1 Feb. 7,9	•Welcome and Introduction •Analyses of a task	
Session #2 Feb. 14,16	•State areas of human requirement in behaviorial terms. •Write areas of human requirement in behaviorial terms for task already analyzed.	Single task analysis.
Session #3 Feb. 21,23	•Receive outline of Instructional Units for assigned cluster. •Begin developing Unit #1.	Areas of human requirement in behaviorial terms for task.
Session #4 Feb. 28 Mar. 2	•Class demonstration-Video Tape •Developing information for Instructional Program #1.	
Session #5 Mar. 7,9	•Review conference on material developed for Instructional Program #1.	Instructional Program #1 due.
Session #6 Mar. 14,16	•Class demonstration, Tel-A-Story, Demonstration and Application. •Developing information for Instructional Program #2.	
Session #7 Mar. 21,23	•Review conference on material developed for Instructional Program #2.	Instructional Program #2 due.
Session #8 Mar. 30	•Coordinating conference for all teachers at University of Maryland.	
Session #9 Apr. 4,6	•Review conference on material developed for Instructional Program #3.	Instructional Program #3 due.

DATE	ACTIVITIES	ASSIGNMENT DUE
Session #10 Apr. 11,13	·Class demonstration, 3 M Educational Materials ·Developing information for Instructional Program #4.	
Session #11 Apr. 18,20	·Review conference on material developed for Instructional Program #4.	Instructional Program #4 due.
Session #12 Apr. 25,27	·Class demonstration, E.F.I. ·Developing information for Instructional Program #5.	
Session #13 May 2,4	·Review conference on material developed for Instructional Program #5.	Instructional Program #5 due.
Session #14 May 9,11	·Class demonstration-Welch Scientific Company-Auto-Tutor. ·Developing information for Instructional Program #6.	
Session #15 May 18	·Final evaluation conference at University of Maryland.	Instructional Program #6 due.

APPENDIX E

LIST OF MEETINGS HELD DURING

THE SECOND QUARTER OF

THE PROJECT

December 12, 1966 - 9:00 A.M. - University of Maryland, College Park, Maryland

Project team administered Rokeach Dogmatism Scale to teachers recommended for participation in the pilot programs.

January 3, 1967 - 1:00 P.M. - University of Maryland, College Park, Maryland

Video tape made of a presentation prepared by the project team concerning Phase I of Cluster Concept Project.

January 10, 1967 - 1:30 P.M. - University of Maryland, College Park, Maryland

Dr. Maley, Mr. Frantz, Mr. Smeltzer, Mr. Roth, Mr. Wood, Mr. Wilson, Mr. Mason, and Mr. Geissenhainer met to select the teachers to participate in the teacher preparation program.

January 26, 1967 - 2:00 P.M. - Montgomery Blair High School, Silver Spring, Maryland

Mr. Frantz and members of the project team met with supervisors and individuals involved in teaching, supervising, and administrating the pilot cluster programs in Montgomery County.

January 31, 1967 - Remington National Training Center, Elmira, New York

Mr. Andrew Baron met with representatives from Remington to discuss possible means of preparing teachers for the electro-mechanical installation and repair cluster.

February 3, 1967 - 2:00 P.M. - Westinghouse Appliance Company, Laurel, Maryland

Mr. Baron and Mr. Jones met with representatives from Westinghouse to discuss possible means of preparing teachers for the electro-mechanical installation and repair cluster.

February 9, 1967 - 10:00 A.M. - Board of Education, Frederick, Maryland

Dr. Maley, Mr. Frantz, Mr. Boyer, and Mr. Jones met with individuals involved in teaching, supervising, and administrating the pilot programs in Frederick County.

February 13, 1967 - Fairmont Heights High School, Prince George's County, Maryland

Dr. Maley, Mr. Frantz, and Mr. Burse met with individuals involved in teaching, supervising, and administrating the pilot programs in Prince George's County.

February 16, 1967 - 9:30 A.M. - Board of Education, Hagerstown, Maryland

Dr. Maley, Mr. Frantz, and Mr. Boyer met with individuals involved in teaching, supervising, and administrating the pilot programs in Washington County.